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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/803,683	03/09/2001	Lawrence J. Revit	12671US02	7009
7590 11/30/2006 McAndrews, Held & Malloy, Ltd 34th Floor 500 West Madison Street Chicago, IL 60661			EXAMINER MEI, XU	
			ART UNIT 2615	PAPER NUMBER

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/803,683

Applicant(s)

REVIT ET AL.

Examiner

Xu Mei

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14 and 38-62 is/are pending in the application.
- 4a) Of the above claim(s) 57-62 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14, 38-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This communication is responsive to the applicant's response dated 09/06/2006.

Election/Restrictions

2. Applicant's election without traverse of Invention I, claims 14 and 38-56 in the reply filed on 09/06/2006 is acknowledged.

Claims 57-62 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Inventions, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 09/06/2006.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 38, 42, 46, 49 and 51-53 are rejected under 35 U.S.C. 102(b) as being anticipated by Begault (US-5,173,944).

Regarding claims 38, 51-53, Begault discloses a sound system (Figs. 1-2) comprising: at least one audio source (12); an audio signal processing system (elements 28-36) for receiving a plurality of audio signals from the audio source and for

Art Unit: 2615

generating therefrom a plurality of processed audio signals, a listening position at which a test subject is placed (18); and a plurality of loudspeakers (20-26) placed about the listening position, the plurality of loudspeakers for receiving at least a portion of the plurality of processed audio signals and for converting those processed audio signals received into a combination of sounds that produce at the listening position acoustic elements typical of a real acoustic environment (see Fig. 2), wherein the audio signals are representative of recordings made by a plurality of microphones (38, 40, inherently directional or omnidirectional microphone) that are placed at locations relative to a recording position that correspond to the locations of the plurality of loudspeakers relative to the listening position (see Fig. 1), the plurality of microphones during recording facing away from a center of the recording position (this broadly claimed language is met by the positioning of microphones 38 and 40 that are placed inside of the ear of listener 18, which is facing away from the inside of the listener's head, i.e., the center recording position), the recording position being located in an environment (16) having sounds desired to be reproduced at the listening position. The inherent directional or omnidirectional microphones of 38 and 40 would have provided an improved S/N ratio received audio signal (as per claim 52).

Regarding claim 42, the loudspeakers 20-26 are mounted to face different direction relative to each other and relative to the listening position as shown in Fig. 1.

For what's called for in claim 46, see gain element 28.

Art Unit: 2615

Regarding claim 49, loudspeakers 20 and 22 generate sound that appears to, but does not, emanate from another of the plurality of loudspeakers 24 and 26 as shown in claim 1.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 39-41, 43, 47-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Begault in view of Steffen et al (Hereinafter "Steffen") (US-6,366,679).

Regarding claim 39, Begault discloses a sound system as discussed in claim 38 above. What does not show by Begault is the plurality of loudspeakers comprises 8 loudspeakers placed in a circle. However, it is old and well known in audio art that plurality of loudspeakers being arranged to any desired configuration is merely according to a person's personal preference. Steffen discloses a multi-channel sound system including a plurality of loudspeakers that having an 8-loudspeaker arrangement being placed in 2 circular configurations (see Fig. 2b) for the purpose of sound output stabilization. It would have been obvious to one of ordinary skill in the art to modify the sound system of Begault by the teaching of Steffen for providing an eight loudspeakers

Art Unit: 2615

arrangement as shown in order to provide improved sound output stabilization. With regard to the specific circular configuration of the eight loudspeakers, it would have been obvious to one of ordinary skill in the art to arranged the 8 loudspeakers to any desired configuration, circular or otherwise, is merely according to a person's personal preference.

Regarding claims 40-41, see Fig. 2b of Steffen.

Regarding claim 43, the loudspeakers 4 and loudspeakers 6 of Steffen are arranged at different height relative to the listening position of 3.

Regarding claims 47-48, see elements 7 and 5 of Steffen.

7. Claims 44-45, 50 and 54-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Begault in view of Shennib (US-5,825,894).

Regarding claims 54 and 56, Begault discloses a sound system as discussed in claim 38 above. What does not show by Begault is the test object comprises a hearing aid. Shennib discloses a hearing evaluation system (Fig. 5) that including hearing aid (22) for a test subject in a clinical setting . It would have been obvious to one of ordinary skill in the art to combines the sound system of Begault with the hearing evaluation system of Shennib in order to provide an improved hearing aid evaluation sound system that is more realistic adjust to the sound environment by including HRTF with regard to the test subject thus provide more accurate hearing testing audio signals in a clinical setting.

Art Unit: 2615

Regarding claims 44-45, Shennib further discloses an audiometer (Fig. 1, audiometer 19). Shennib further discloses processed audio signals representing a target signal (Fig. 10, direct paths) and an interfering noise signal (Fig. 10, reflective paths).

Regarding claim 50, Shennib further discloses speakers are being located at equidistant (Fig. 5) from each other. This would have met the specific calibrated point(s) being located at or near the listening position as claimed.

Regarding claim 55, Shennib discloses the hearing evaluation system is being conducted in a real world environment as shown in Fig. 5.

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shennib (US Patent 5,825,894) in view of Kasai et al. (Hereinafter "Kasai") (US Patent 6,067,360).

Regarding Claim 14, Shennib discloses a multi-channel sound reproduction system for testing hearing and hearing aids (Figure 5 and 7) comprising: at least one audio source (Figure 1, storage 17); a listening position at which a test subject is placed (Figure 5); a plurality of loudspeakers (Figure 7 speakers 89-92) for receiving a plurality of audio signals from the audio source (Figure 1 discloses speakers 16 connected to storage 17); a first further loudspeaker located at approximately ear level and at front and center of a test subject in the listening position (Figure 7 speaker 89), the first further loudspeaker for receiving a further audio signal from the audio source (Figure 1 discloses speakers 16 connected to storage 17); a second further loudspeaker located

Art Unit: 2615

at an overhead center position above the test subject in the listening position (Figure 7 discloses speaker 93 located directly over or above the head in the sagittal, i.e. center, plane). Although Shennib discloses creating signals that are representative signals received in real listening environments in a three-dimensional space (Column 9, lines 27-41). Although not directly above the test subject it would be a matter or design choice to place the speaker directly above the subject since claim 14 only claims speaker locations. Shennib does not disclose the at least one audio source transmitting a time-offset or delayed sum of the at least a portion of the plurality of audio signals and the further audio signals to the second further loudspeaker. Kasai discloses a method for processing audio signals to produce a surround-effect (i.e. real listening environment in a three-dimensional space) (Column 2 lines 26-31). Kasai discloses processing comprising of delay processors (Figure 5, references 14L, 14R, and 30) and summers (44, 46, 16, 18, and 54) to provide the surround sound effect of Figure 4. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include processing to delay and sum signals in order to provide a three-dimensional sound space as required by Shennib.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ide et al and Johnson et al disclose different sound recording devices and processing systems for recording preserving sound field.

Art Unit: 2615

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xu Mei whose telephone number is 571-272-7523. The examiner can normally be reached on maxi flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2615

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

2


Xu Mei
Primary Examiner
Art Unit 2615
11/26/2006